

REMARKS

Upon entry of this amendment, claims 3 and 4 are all the claims pending in the application. Claims 1 and 2 have been canceled by a previous amendment. Claims 3 and 4 have been amended. No new matter has been added. In view of the above amendments and the following remarks, reconsideration and further examination are requested.

Replacement formal drawings have been provided for Figures 4 and 7. In Figure 4, a lead line and reference number 24 have been added. In Figure 4, reference number "34" has been changed to --43--. No new matter has been added.

The specification and abstract have been reviewed and revised to make editorial changes thereto and generally improve the form thereof, and a substitute specification and abstract are provided. Also enclosed is a marked-up copy of the original specification and abstract showing the changes incorporated into the substitute specification and abstract. No new matter has been added by the substitute specification and abstract.

Applicants note that claims 3 and 4 have been amended for improved clarity and general readability purposes and do not present new issues that would require further consideration or search. Such amendments do not narrow the scope of the claims and are not made in response to any prior art or other rejection.

Claim Rejection - 35 U.S.C. 102

Claims 3 and 4 were rejected under 35 U.S.C. § 102(b) as being clearly anticipated by U.S. Patent No. 3,120,282 to Pickard. This rejection is respectfully traversed for the following reasons. A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987).

The present invention according to claims 3 and 4 relates to a water swivel 18 having a built-in overshot assembly 5 accommodated intermediately therein and two water supply ports 3 and 4 across the built-in type overshot assembly 5. The lower water supply port 3 is utilized to intake pressurized water for digging, and the upper water supply port 4 is utilized to intake pressurized water for pushing down the built-in type overshot assembly 5. The water swivel 18 can be disposed at one end of a boring machine throughout operation, and thus it is possible to

switch one water supply port to the other water supply port by remote control. Accordingly, the distinguishing features of the amended claims are as follows.

Claim 3 recites, *inter alia*:

“...wherein said water swivel assembly includes an upper water supply port at an upper position of said water swivel assembly and a lower water supply port at a lower position of said water swivel assembly,

wherein said water swivel assembly accommodates said over-shot assembly at an intermediate position such that a pressurized fluid is supplied from said upper water supply port to lower said over-shot assembly through said drill rod to an upper end of said inner tube assembly.”

Claim 4 recites, *inter alia*:

“...a mechanism for lifting said drill head, while said drill rod is retained in a hole, for extracting said inner tube assembly from said drill rod,

wherein the over-shot assembly is for raising said inner tube assembly through said drill rod.”

Pickard discloses wire line core barrel improvements, but does not teach or suggest each and every element as recited in claims 3 and 4. Pickard discloses a water swivel 20 conventionally having only one “water supply port” (pressure control valve 27) connected to pipe 22 since exhaust valve 26 is an “water outlet/discharge port.” Further, there is no “water supply port” near the female thread end 18 located at the upper or lower position of the over-shot assembly 125, since “water supply port” means a hole to intake fluid from outside a boring machine and supply fluid into the inside thereof. Furthermore, the over-shot assembly 125 is located separately from the water swivel 20 instead of being accommodated at an intermediate position of the water swivel assembly 20. In fact, in Pickard, as shown in Figures 1 and 2, the water swivel 20/112 is only utilized in digging and then it appears that a casing head 110, in place of the water swivel 20, is utilized in pushing the overshot assembly 125.

Since this replacement seems to be made by hand, in operation, this drilling method takes a lot of time as compared with the present invention in which it is not necessary that the water swivel 18 be replaced with a casing head, or the like. In this regard, Pickard acknowledges “the water swivel is of conventional construction and therefore will not be further described” at column 5, lines 22 and 23.

In summary, with regard to amended independent claim 3 of the present application, over-shot assembly 125 of Pickard is located outside of water swivel assembly 20, and the water swivel assembly has only one port to receive fluid from tubular member 22 for moving the overshot assembly via piston 148.

To the contrary, claim 3 recites that **the water swivel assembly** “includes an upper water supply port at an upper position of said water swivel assembly and a lower water supply port at a lower position of said water swivel assembly.” Further, claim 3 recites that **the water swivel assembly** “accommodates said over-shot assembly at an intermediate position such that a pressurized fluid is supplied from said upper water supply port to lower said over-shot assembly through said drill rod to an upper end of said inner tube assembly.” These features are lacking from Pickard, and accordingly, claim 3 is not anticipated by Pickard, and is considered patentable.

With regard to claim 4, this claim recites **a mechanism** “for lifting said drill head, while said drill rod is retained in a hole, for extracting said inner tube assembly from said drill rod, wherein the over-shot assembly is for raising said inner tube assembly through said drill rod.” Such a mechanism is lacking from Pickard, and accordingly, claim 4 is not anticipated by Pickard. In addition, as claim 4 depends from claim 3, it is therefore considered patentable at least by virtue of its dependency.

Conclusion

In view of the above amendments and remarks, it is respectfully submitted that the present application is in condition for allowance and an early Notice of Allowance is earnestly solicited. However, in the event that the Examiner continues to rely on Pickard to reject the claims, the Examiner is respectfully requested to specifically identify where each claimed limitation is found in Pickard.

If after reviewing this Amendment, the Examiner believes that any issues remain which must be resolved before the application can be passed to issue, the Examiner is invited to contact the Applicants' undersigned representative by telephone to resolve such issues.

Respectfully submitted,

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